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SERIAL NO.: 10/705,983
FILED: November 13, 2003
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REMARKS

The present response is intended to be fully responsive to all points of objection and/or rejection raised by the Examiner and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the application is respectfully requested.

Applicants assert that the present invention is new, non-obvious and useful. Prompt consideration and allowance of the claims is respectfully requested.

Drawings Rejections

The drawings have been objected to for "failing to comply with 37 CFR 1.84 (p) (4) because reference characters "120" and "200" have both been used to designate a mobile station; reference characters "130" and "300" have both been used to designate dual output synthesizer; reference characters "140" and "250" have both been used to transceiver; reference characters "150" and "260" have both been used to designate a first antenna; reference characters "160" and "270" have both been used to designate a second antenna."

Regarding the Examiner's comments as to the seeming discrepancies between Fig. 1, and Fig. 2, it is respectfully submitted that the elements are numbered differently so as to emphasize that Figs. 1 and 2 may represent different embodiments of the invention. Accordingly, for example, transceiver 140 in one embodiment may be of a different configuration than the transceiver 300 depicted in the embodiment of Fig. 2. Likewise, mobile station 120 may be different from the embodiment of mobile station 200 depicted in Fig. 2. Accordingly, Applicants respectfully request that the objection be withdrawn.

The recitation in block 140 "TRANSCIEVER" is objected to as improper; it is suggested by the Examiner to be changed to "TRANCEIVER". The drawings are objected to as failing to comply with 37 CFR 1.84 (p) (5) because they do not include the following reference sign(s) mentioned in description: "225" and "235".

In Fig. 1, "TRANSCIEVER" has been corrected; in Fig. 2, item numbers 225 and 235 have been inserted, and "FRACTIONAL" has been corrected.

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Remarks to the Specification

Applicants are grateful for the Examiner's close reading of the specification, and for pointing out the error in the specification. The amendment to the specification is editorial in nature and does not introduce new matter.

Status of Claims

Claims 1-24 are pending in the application.

Claims 1-24 have been rejected.

Claims 1, 3, 6, 8, 12, 18, have been amended. Applicants respectfully assert that the amendments to the claims add no new matter.

Claims 2, 4, 5, 9, 10, 13, 15-17, 19, 21, 22 have been cancelled in this submission with prejudice to being re-included or resubmitted in a future submission or application.

CLAIM REJECTIONS

35 U.S.C. § 102 Rejections

In the Office Action, the Examiner rejected claims 1-11 and 17 under 35 U.S.C. § 102(b), as being anticipated by Brown (US 6333678 B1). Applicants respectfully traverse this rejection in view of the remarks that follow. Rejected claims 2, 4, 5, 9, 10, and 17 have been cancelled in this submission without prejudice, accordingly, the rejection of these claims is moot.

Brown discloses:

A method and apparatus for filtering phase noise or jitter from a reference signal that may be of any arbitrary rate. By using a synthesizer to convert a signal at the output of a low noise signal source to a signal with frequency similar to a high speed output

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rate with desired relationship to the reference signal, a limitation normally caused by the narrow tuning range of a VCXO (a typical low noise signal source) can be overcome. Conversely, the desired high speed output rate may be converted to one similar to the VCXO frequency. (Abstract)

Moreover, in all of the figures in Brown, there is disclosed only a method and apparatus for obtaining a single output frequency from a single input frequency. Moreover, Brown does not teach two synthesizers, wherein the output of a first synthesizer is used as an input to a second synthesizer.

Accordingly, Brown does not teach or suggest an apparatus as recited in claim 1 comprising a fractional N synthesizer to provide a first frequency of a first output signal and an integer divider synthesizer to receive the first output signal of the fractional N synthesizer and to provide a second output signal having a second frequency derived from the first frequency of the first output signal. Likewise, claims 3, 6 and 7, which depend from claim 1 are allowable.

In addition, claim 3, which recites that "the second frequency is substantially similar to the first frequency" is not taught or disclosed by Brown.

Regarding claim 8, Brown does not teach or disclose a method of generating by an integer divider synthesizer an output signal having a frequency derived from an input signal having a desired frequency generated by a fractional N synthesizer and providing said output signal and said input signal to a first mixer and a second mixer, respectively. Likewise, claim 11, which depends from claim 8 is allowable.

Moreover, claim 11, which further recites generating the input signal and the output signal from a signal having a fundamental frequency is allowable.

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35 U.S.C. § 103 Rejections

In the Office Action, the Examiner rejected claims 12-16 under 35 U.S.C. § 103(a), as being unpatentable over Brown (US 6333678 B1) in view of Kawano (US 6181923 B1), and further in view of McLean (US 6657601 B2). Rejected claims 13, 15 and 16 have been cancelled in this submission without prejudice, accordingly, the rejection of these claims is moot.

As discussed above, Brown does not teach a first phase locked loop including an fractional N synthesizer producing a first frequency used as an input to a second phase locked loop including an integer divider producing a second frequency. Nor does Kawano remedy this deficiency. Kawano relates to:

the automatic frequency control circuit and the method of automatic frequency control. The automatic frequency control circuit for processing frequency control of a received signal frequency based on an incoming received signal comprises a first control circuit for processing frequency control based on a precision counter by using the incoming received signal and a second control circuit for processing frequency control based on a coarse counter by using the incoming received signal, wherein the first control circuit and the second control circuit are configured to be used interchangeably in response to the incoming received signal. (Abstract)

However, neither Brown nor Kawano, either separately or together disclose Claim 12 recites an apparatus having a first phase locked loop to set a first frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive said first frequency from an input frequency; a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer; and a transceiver having first and second mixers operably coupled to the first and second voltage controlled oscillators respectively and able to

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transmit and receive signals by at least two dipole antennas. Likewise, claim 14, which depends from claim 12 is allowable.

Moreover, claim 14, which recites that the frequency of the second output signal is substantially similar to the frequency of the first output signal, is neither anticipated nor obvious in light of Brown or Kawano, either alone or taken together.

In the Office Action, the Examiner rejected claims 18-24 under 35 U.S.C. § 103(a), as being unpatentable over Brown (US 6333678 B1) in view of Kawano (US 6181923 B1) (with Plotnik (US 6873608 B1) figure 1 for inherency of a portable telephone terminal using an internal antenna, also published as WO99/08456). Rejected claims 19, 21 and 22 have been cancelled in this submission without prejudice, accordingly, the rejection of these claims is moot.

For at least the reasons presented above, claim 18 is allowable. Neither Brown nor Kawano discloses a wireless communication system comprising a mobile station having a dual output synthesizer, which includes a first phase locked loop to set a first frequency of a first output signal of a first voltage controlled oscillator using a fractional N synthesizer to derive said first frequency from an input frequency; a second phase locked loop to receive the output signal of the first voltage controlled oscillator and to control a second voltage controlled oscillator to provide a second output signal having a second frequency derived from the first frequency using an integer divider synthesizer; and a transceiver having first and second mixers operably coupled to the first and second voltage controlled oscillators respectively and able to transmit and receive signals by at least two dipole antennas. Accordingly, claim 18, and claims 20, 23 and 24, which depend therefrom are allowable.

Moreover, claim 20 is allowable, as neither Brown nor Kawano discloses the wireless communication system of claim 18, wherein the frequency of the second output signal is substantially similar to the frequency of the first output signal.

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In view of the foregoing amendments and remarks, the pending claims are deemed to be allowable. Their favorable reconsideration and allowance is respectfully requested.

Should the Examiner have any question or comment as to the form, content or entry of this Amendment, the Examiner is requested to contact the undersigned at the telephone number below. Similarly, if there are any further issues yet to be resolved to advance the prosecution of this application to issue, the Examiner is requested to telephone the undersigned counsel.

Please charge any fees associated with this paper to deposit account No. 50-3355.

Respectfully submitted,



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Dated: May 2, 2007

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APPENDIX A

REPLACEMENT SHEET

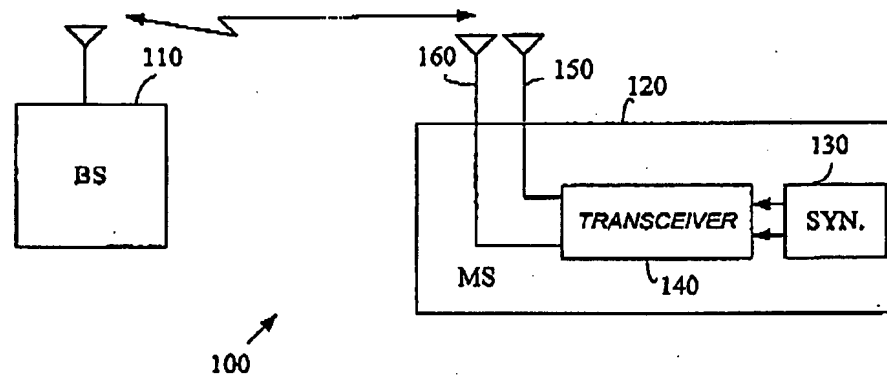


FIG. 1

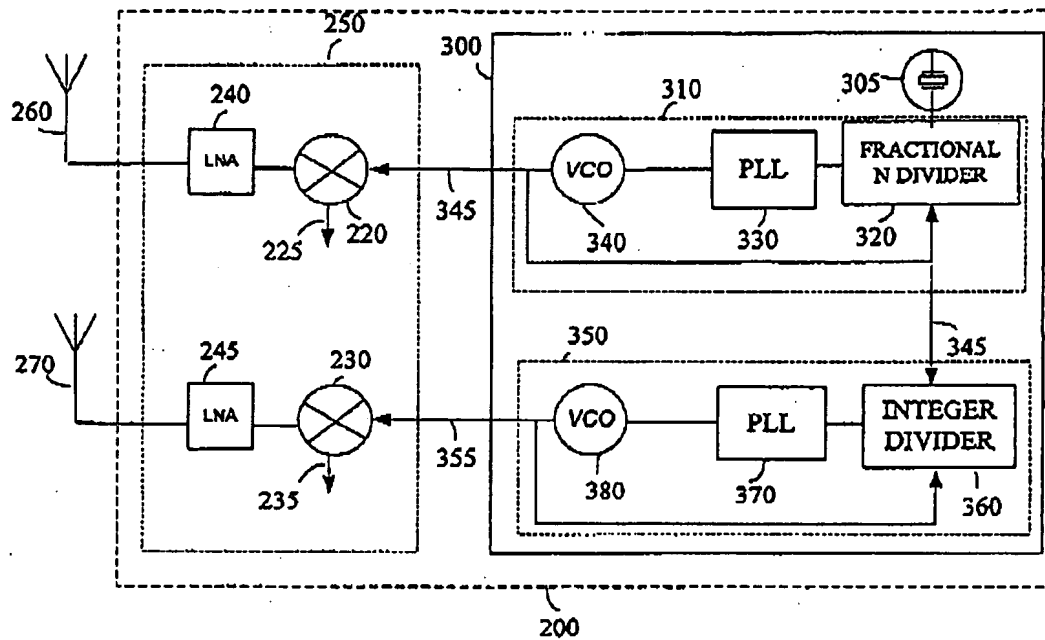


FIG. 2